die unaided till the light comes in some hypothetical and mysterious way, and of those now living, whose lives are due to their laying hold of the remedies and the prophylactics which vivisection has brought?

But it is not certain that the knowledge could be obtained in any other way, for the discovery of the lethal agents in the transmission of disease was only, and could only, be determined by means of experiments on living animals.

It remains to be proved that the human race has benefited considerably by the results obtained from vivisection. To discuss this in detail would involve the tracing of every step in the progress of medicine, for medicine is no longer an art to be practiced by rule of thumb, and whatever progress it has made is due to observation and experiment. There was reason for the mocking words of Voltaire, when he jeered at the old physicians, "pouring drugs, of which they knew little, into bodies of which they knew less." They were doing their best in those pre-vivisection days; they gave the white spots on a leaf to consumptive patients; they gave the carrot in jaundice because it was yellow; for kidney diseases they gave fruits which resembled that organ. They were groping in the dark unaided by the light of experiment, and men were dying around them of complaints that to-day it is unnecessary to feel. Contrast the present position of medicine with that of fifty years ago, and you have a measure of the value of experiments, for the most part performed on living animals. Experimentation on animals for the benefit of humanity is the keynote of modern medicine, and the physician who underestimates its value is out of tune with the best that is said and thought on the subject. Physiology is at the basis of rational medicine, and it is to physiology the physician must seek if he would be anything more than a "medicine man," a dispenser of chance-gotten drugs. Experimental pathology is the synthesis, as clinical diagnosis is the analysis of disease, and physiology reduces the facts to a system. If physiology consist in the study of vital processes going on in living organisms, it follows that many of them must be studied as they actually take place. It is useless to appeal to the dead body, for though there the changes can be noted the processes will have passed away. In the dead body there is no disease. As Virchow remarked, disease presupposes life.

It will be possible to refer only to the most notable examples of vivisectional results in relation to the practice of medicine, but enough will be given to obtain for it the justification of practical utility. Vesalius, the founder of anatomical study, states in his work on the human body that it was through experiments on living animals he was led to his wide generalizations in anatomy which,